Esters

The present invention relates to esters and in particular to esters of cellobiose, compositions containing them, and their use as structurants.

Background

Many compositions intended for topical application to skin, including a number for various parts of the body, such as face, gums, hands, limbs, feet, torso, underarm, breasts, genitalia, hair and other parts of the body, comprise one or more active agents are distributed within or otherwise supported by a carrier fluid. Although it is possible, in many instances, that such compositions are in the form of lotions, it is often desirable that the active ingredient in such compositions, be it for medical or for cosmetic purposes, remains substantially localised in the region of the body to which it has been topically applied. In order to assist this to happen and also to enable alternative dispensers for the composition to be employed, the carrier fluid can be thickened or structured, for example by introducing one or more materials for that purpose. Thickened or structured compositions commonly adopt the form of firm sticks, or soft solids and creams. In such circumstances, the materials are often referred to as structurants or gelants and may sometimes alternatively be called thickeners, depending on the final form of the composition. The carrier fluid may comprise water and/or a

water-miscible organic liquid and alternatively or additionally a water-immiscible liquid.

In general, the choice of structurants or thickeners tends to vary in accordance with the physical nature of the carrier fluid and in particular on whether it is water-miscible or immiscible. The present invention is directed more particularly towards materials which are capable of structuring a water-immiscible liquid, which may act by itself as carrier for an active ingredient or comprise a water-immiscible phase in an emulsion or micro-emulsion.

Many materials have been proposed for structuring or thickening a water-immiscible liquid phase of a composition intended for topical application to humans. These have included waxes natural waxes, such as paraffin waxes or those typically extracted from vegetation, such as candelilla wax, or glyceride waxes, or produced by chemical treatment of natural oils, for example hydrogenation of castor oil, or produced by extracted from fauna, such as beeswax or spermaceti wax, or derivatives or synthetic variants of them. Others include fatty alcohols, eg linear C18 or C22 alcohols. Other materials are polymeric, such as polysiloxane waxes, or polysiloxane elastomers, or various polyamide/polysiloxane copolymers.

In the closing years of the 20th century, a number of structurants were identified which the present inventors classify as fibre-forming. These include 12-hydroxy stearic acid, various amino acid amides, including particularly, combinations of sterols and sterol esters, including

particularly β-sitosterol and γ-oryzonol, derivatives of threitol, diamide derivatives of cyclohexane, and acylated derivatives of cellobiose. Each of the various structurants has to a greater or lesser extent its particular benefits and its intrinsic disadvantages, either in absolute or relative terms. These properties can include the ability of the material to gel or otherwise structure the carrier liquid, including the resultant hardness and stability, and the sensory properties and appearance of the resultant composition, the latter being of great importance for cosmetic compositions.

One of the most desirable class of structurants comprises acylated cellobiose, as described in pending PCT application No PCT/GB 00/01228, now published as WO 00/61079, particularly for structuring a water-immiscible liquid in a cosmetic compositions, including especially antiperspirant and deodorant compositions. Said PCT application describes various benefits for the acylated cellobiose structurant and exemplifies many compositions demonstrating such benefits. In said PCT application, it has been disclosed that the cellobiose can adopt either an α or β configuration, preferably the former, and various preferences are given for both the number of acyl substituents of the cellobiose nucleus and the chemical constitution of the substituents. The description of alternatives included the choice of an aliphatic acyl substituent, whether it is linear or branched and its chain length. Acylated cellobiose materials were exemplified in which identical acyl substituents were employed. The most highly preferred acylated cellobiose described therein is cellobiose octanonanoate.